

What is claimed is:

1. A mouse model for bone metabolism, the model comprising a mouse exposed to a compound selected from the group consisting of parathyroid hormone (PTH), an analogue of PTH, and a fragment of PTH for a time sufficient whereby serum calcium concentration and RANKL mRNA expression are increased in the model.
2. The mouse model of claim 1, wherein the compound is PTH.
3. The mouse model of claim 1, wherein the mouse is exposed to the compound for about 0.5 h to about 96 h.
4. The mouse model of claim 3, wherein the mouse is exposed to the compound for about 24 h.
5. The mouse model of claim 1, wherein the mouse is exposed to about 0.5 ug to about 8 ug of the compound per 100 g of bodyweight.
6. The mouse model of claim 1, wherein the calcium concentration is increased by about 10%.
7. The mouse model of claim 6, wherein the calcium concentration is increased by about 25%.
8. The mouse model of claim 7, wherein the calcium concentration is increased by about 100% 24 h after exposure to the compound.
9. The mouse model of claim 1, wherein RANKL mRNA expression is increased by about 10%.

10. The mouse model of claim 1, wherein bone metabolism disease is osteoporosis.

11. A method of screening for a potentially therapeutic agent which affects bone metabolism, the method comprising:
5 administering the agent to the mouse model of claim 1;
and
assessing the mouse for an alteration in a bone metabolism related marker affected by the agent.

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12. A method for assessing the activity of potentially therapeutic agents useful for the treatment and prevention of osteoporosis, the method comprising:
providing a mouse model of claim 1;
15 administering the agent to the mouse model; and
assessing the affect of the agent on the mouse model treated with the agent compared to an untreated mouse model.

13. A method for testing a mouse model for bone metabolism disease, the method comprising:
20 administering to the mouse an antisense oligonucleotide to RANK or RANKL;
administering to the mouse a compound selected from the group consisting of parathyroid hormone (PTH), an analogue of PTH, and a fragment of PTH; and
25 assessing the affect of the antisense oligonucleotide on the mouse compared to a control mouse not treated with the antisense oligonucleotide.

14. The method of claim 13, wherein the antisense oligonucleotide is administered for about 1 day to about 30 days.

15. The method of claim 14, wherein the antisense oligonucleotide is administered from about 5 days to about 20 days.

16. The method of claim 13, wherein the antisense oligonucleotide is administered at a dose of about 5 mg/kg/day to about 100 mg/kg/day.

5 17. The method of claim 13, wherein the compound is administered after the complete administration of the antisense oligonucleotide.

10 18. The method of claim 17, wherein the compound is PTH.

19. The method of claim 17, wherein the mouse is exposed to the compound for about 0.5 h to about 96 h.

15 20. The method of claim 19, wherein the mouse is exposed to the compound for about 24 h.

21. The method of claim 17, wherein the mouse is exposed to about 0.5 ug to about 8 ug of the compound per
20 100 g of bodyweight.

22. The method of claim 13, wherein the antisense oligonucleotide is selected from the group consisting of SEQ ID No.: 180, SEQ ID No.: 185, SEQ ID No.: 356, and SEQ ID
25 No.: 357, or combinations thereof.

23. The method of claim 13, further comprising a calcitonin treated mouse as a control.

30 24. The method of claim 13, wherein the antisense oligonucleotide modulates RANKL mRNA expression, RANK mRNA expression, or serum calcium concentration, and combinations thereof, compared to the control.

35 25. The method of claim 24, wherein the modulation is at least about 10%.